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MAIL STOP PATENT
Attorney Docket No.: 25624

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Asaf BAREKET

Serial No.: 10/633,312

Filed: August 4, 2003

For: **TAILGATE LADDER**

TRANSMITTAL LETTER

Commissioner for Patents
Alexandria, Virginia 22313-1450

Sir:


Submitted herewith for filing in the U.S. Patent and Trademark Office is the following:

- (1) Transmittal Letter
- (2) Request for Priority
- (3) Priority documents No. DA 151819

Respectfully submitted,

NATH & ASSOCIATES PLLC

By: _____


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REQUEST FOR PRIORITY UNDER 35 U.S.C. §119

Commissioner of Patents
Alexandria, Virginia 22313-1450

Sir:


In the matter of the above-captioned application, notice is hereby given that the Applicant claims as priority date September 19, 2002, the filing date of the corresponding application filed in ISRAEL, bearing Application Number 151819.

A Certified Copy of the corresponding application is submitted herewith.

Respectfully submitted,

NATH & ASSOCIATES PLLC

Date: November 6, 2003

By: 
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לכתחילה עם הבקשה
לפטנט לפי הפרטים
הרשומים בעמוד הראשון
של הנספח.

This 07-08-2003 היום

רשם הפטנטים
Commissioner of Patents

נתאשר
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לשימוש הלשכה
For Office Use

מספר: Number	151819
תאריך: Date	19-09-2002
הוקדם/נדחה: Ante/Post-dated	

בקשה לפטנט
Application For Patent

אני, (שם המבקש, מענו ולגבי גוף מאוגדת מקום התאגדותו)
I, (Name and address of applicant, and in case of body corporate-place of incorporation)

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Asaf Metal (1997) Ltd. of 21 Ruchama Street, Ramat Gan 52354, ISRAEL

ששמה הוא Right of Law
of an invention the title of which is

בעל אמצאה מכח
Owner, by virtue of

סולם דלת אחורית

Tailgate ladder

(בעברית)
(Hebrew)

(באנגלית)
(English)

Hereby apply for a patent to be granted to me in respect thereof.

מבקש בזאת כי ינתן לי עליה פטנט

• בקשת חלוקה • Application of Division		• בקשת פטנט מוסף • Appl. for Patent of Addition		דרישת דין קדימה • Priority Claim		
מבקשת פטנט from application	מס' / No.	לבקשה/לפטנט to Patent/Appl.	מס' / No.	מספר/סימן Number/Mark	תאריך Date	מדינת האיגוד Convention Country
No. _____	מס' _____	No. _____	מס' _____			
Dated _____	מיום _____	Dated _____	מיום _____			
P.O.A.: _____				יפוי כח: _____		
C. 140658				המען למסירת מסמכים בישראל Address for Service in Israel		
REINHOLD COHN AND PARTNERS Patent Attorneys P.O.B. 4060, Tel-Aviv				ריינהולד כהן ושותפיו עורכי פטנטים ת"ד 4060, תל-אביב		
חתימת המבקש Signature of Applicant				היום 18 בחודש September שנת 2002 This of Year		
בשם המבקשים, ריינהולד כהן ושותפיו ע"י -						
				לשימוש הלשכה For Office Use		

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• מחק את המיותר
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סולם דלת אחורית

Tailgate ladder

Asaf Metal (1997) Ltd.

אסף מתכת (1997) בע"מ

C. 140658

TAILGATE LADDER

FIELD OF THE INVENTION

This invention relates generally to ladders, and more particularly to a truck tailgate ladder.

BACKGROUND OF THE INVENTION

5 Users of trucks frequently need to gain access to the truck bed from the rear. At that time it is often desirable to have one's hands free to help gain access and/or carry items to be loaded or unloaded. Trucks such as pickup trucks typically have a tailgate that can be opened to help access, however even when open to the horizontal position, the tailgate is commonly about 75 cm above the ground. A
10 reasonable solution for ingress and egress in light of the aforementioned is to utilize a sturdy ladder that is convenient and safe to use and preferably takes little or no storage space.

 Various types of ladder assemblies are known from the prior art. In US 6,422,342, Armstrong et al disclose a stowable step with a single step platform, or
15 rung, pivotally attached to a member that can slidably be inserted, or retracted, into a housing. The step is only supported from above by its siderails is potentially unstable. Furthermore, deployment of the ladder requires the user to retract the step which can be inconvenient if the user is carrying items to be loaded or unloaded from the truck.

20 In US 4,848,821, Llewellyn discloses a similar type of ladder, though instead of being retractable it is foldable, and it has a second step. The ladder according to that patent is also attached at its top and requires manual deployment

by the user. However, as it is only attached to the associated tailgate, is not particularly stable.

To add stability, Peacock, Burdette Jr. and Barrow in their US patents 4,757,876, 5,205,603 and 6,116,378, respectively, have features allowing their
5 ladders to rest on the ground. However, all of these ladders require some manual deployment of the ladder by the user.

SUMMARY OF THE INVENTION

In view of the above, it is an object of the present invention to provide a ladder assembly attachable to a truck tailgate for access to the truck bed that is
10 stable and convenient to use even for small people, particularly such a ladder that is deployable to a useful position without need for manipulation by the user.

According to the present invention there is provided a ladder for a truck fitted with a pivotal tailgate, the ladder comprising a first leg portion pivotally coupled to a second leg portion, at least one of said leg portions being fitted with at
15 least one rung; the first leg portion being pivotally attachable to an upper portion of the tailgate such that the first leg portion extends behind the tailgate; whereby when the tailgate is in its closed position the first leg portion and the second leg portion continuously extend in a first operable position and opening the tailgate facilitates deploying the ladder into a corresponding second operable position.

20 According to one particular embodiment of the invention, the second leg portion of the ladder is pivotally attachable to a lower portion of the rear of the truck, whereby opening the tailgate entails spontaneous deployment of the ladder into its second operable position.

According to one specific embodiment, at least the first leg portion
25 comprises two parallelly extending siderails with one or more rungs parallelly disposed therebetween. The second leg portion comprises, according to one modification, only a single rail and according to a second modification, two such rails, parallelly extending and optionally fitted with one or more rungs parallelly disposed therebetween.

According to a modification of the invention the second leg portion is free, whereby said second leg portion is swingable such that its bottom end is engageable with the ground. According to one particular aspect of this arrangement, the pivot joint between the first and second leg portions is fixable
5 such that the angular position of the second leg portion can be fixed.

Advantages of the ladder assembly of the present invention include, but are not limited to, the following:

- The ladder is stable since it is supported, according to one of its embodiments, at its lower end as well as its upper end;
- 10 - If the user desires access to the rear of the truck with the tailgate closed, there is no additional operation or deployment necessary to conveniently use the ladder;
- If the user desires access to the rear of the truck with the tailgate open, the ladder is deployed simply by opening the tailgate;
- 15 - When the tailgate is open the ladder has a particularly low first step for easy access even by short people;
- The ladder is ready for use (when the tailgate is up/closed) or spontaneously/automatically deployed, i.e. in a hands-free manner, allowing convenient use even when loading or unloading items, simply by opening
20 the tailgate.

BRIEF DESCRIPTION OF THE DRAWINGS

In order to understand the invention and to see how it may be carried out in practice, some embodiments will now be described, by way of non-limiting examples only, with reference to the accompanying drawings, in which:

25 **Fig. 1** is a rear perspective view of a ladder according to a first embodiment of the present invention, attached to a tailgate and a bumper of a pickup truck, wherein:

Fig. 1A illustrates the tailgate in its closed, essentially upright position;

Fig. 1B illustrates the tailgate partially open;

Fig. 1C illustrates the tailgate fully opened, essentially horizontal position;

Fig. 2 is a rear perspective view illustrating a modification of the embodiment of the ladder according to **Fig. 1**, the ladder unattached to the bumper of the truck; and

5 **Fig. 3** is a rear perspective view of a ladder according a different embodiment, wherein the ladder has one lower support leg.

DETAILED DESCRIPTION OF THE INVENTION

Referring first to **Figs. 1A - 1C**, there is illustrated a rear portion of a pick-up truck **10** (or any other truck fitted with a tailgate) fitted with a tailgate **12**,
10 illustrated in **Fig. 1A** in its closed, essentially vertical position, in **Fig. 2** in a midway open position and in **Fig. 1C** in its open position, i.e., essentially horizontal and flat with the bed of the truck.

A ladder, generally designated **18**, is provided, the ladder comprising a first leg portion **20** comprising in turn two parallelly extending siderails **26** and **28** and a
15 second leg portion **30** comprising two parallel siderails **32** and **34** with several rungs **36** parallelly fitted between the side rails.

It is noticed that the first leg portion **20** is pivotally articulated to the second leg portion **30** by means of a pair of pivot hinges **40**. Further noticed, the top end of the first leg portion **20** is hingedly attached to a top end of the tailgate **12** by a
20 corresponding attachment bracket **44** hingedly articulated to the siderails **26** and **28** by a pair of pivot hinges **48**. The lower end of the second leg portion **30** is connected to a lower end of the truck **10**, in this embodiment, to a bumper **52** by means of support legs **54** pivotally articulated to siderails **32** and **34** by pivots **56**.

However, it is to be appreciated that rather than support legs **54**, siderails **32**
25 and **34** may be integrally fitted with suitable extensions pivotally articulated to the bumper **52** or to a different location at a lower portion at the rear end of the truck **10**, such as its chassis.

It is noticed that hinges **40** coupling between the first leg portion **20** and the second leg portion **30** extends behind (i.e. rearward) of the attachment bracket **44** attached to the tailgate **12** and the attachment to the bumper **52** at pivot **56**.

It is further seen from the consecutive illustrations of Figs. 1A, 1B and 1C
5 that the ladder **18** is already in an operable position when the tailgate **12** is closed, i.e., in its essentially vertical, upright position of Fig. 1A, and that the ladder is deployed to an alternative operative position merely by opening the tailgate (seen midway in Fig. 1B and fully opened, namely flat with the bed of the truck **10** in Fig. 1C). Furthermore, the position of Fig. 1C is such that the lowermost of rungs
10 **36** of the first leg portion **20** is in a lowermost position thereby providing easy access for even short people or when the truck **10** is positioned on an uneven surface.

It is now appreciated that closing the tailgate **12** into the position of Fig. 1A entails simultaneous corresponding shifting of the ladder **18** into its expanded
15 position allowing a person to use the ladder to climb into the bed of the truck **10** over the closed tailgate **12**.

An advantage of a configuration illustrated in Figs. 1A-1C is that the truck may be used also when the tailgate **12** is in its open position as suitable for carrying long cargo whereby one may drive the truck in this position and the ladder **18** does
20 not cause any disturbances as it will not engage the ground.

Turning now to the embodiment of Fig. 2, the same reference numbers are used for describing similar components as in the embodiment of Figs. 1A-1C. The embodiment of Fig. 2 differs from the embodiment of Figs. 1A-1C in that the lower ends of the second leg portion **30** are detachable from the support legs **54** merely by
25 detaching connecting pivot pins **60**, thus allowing the second leg portion to swing down into engagement with the floor or ground, as seen in Fig. 2. This position is in particular useful when the truck **10** is standing on uneven terrain or when there exists a barrier.

In accordance with still another embodiment, the pivots **64** connecting
30 between the first leg portion **20** and the second leg portion **30** are fixable such as to

arrest the second leg portion 30 at a variety or any angular position with respect to the first leg portion 20.

Turning now to Fig. 3 of the drawings, there is illustrated still a different embodiment of the present invention differing from the first embodiment of Figs. 1A-1C in that the second leg portion comprises a single leg member 70 having an upper end thereof pivotally coupled to a lower end of the side rail 26 of the first leg portion 20 and its lower end being pivotally coupled at 72 to the support leg 54 as in the embodiment of Figs. 1A-1C. This embodiment allows for a lower cost, lighter weight ladder that can be more quickly assembled and disassembled.

The ladder described above is preferably made of a strong material resistant to outdoor environmental conditions such as a metal, for example aluminum or possibly an appropriate plastic material. The siderails can be provided with a roughened surface for improved hand gripping as can the rungs for improved footing.

It should be noted that various components of the ladder described above, as well as variations thereof are provided merely by way of illustration and are by no means exclusive, and many variations and modifications thereof are possible.

Still another embodiment of the invention may include suitable locking means for locking the pivot located between the first and second leg portion to thereby prevent unauthorized opening of the tailgate. This may be facilitated by locking the hinge 40 of Fig. 1A, to thereby prevent opening the tailgate 12.

CLAIMS:

1. A ladder for a truck fitted with a pivotal tailgate, the ladder comprising a first leg portion pivotally coupled to a second leg portion, at least one of said leg portions being fitted with at least one rung; an upper end of the first leg portion
5 being pivotally attachable to an upper portion of the tailgate and a lower end of the second leg portion being pivotally attachable to a lower portion of the truck, whereby when the tailgate is in its closed position, the first leg portion and the second leg portion continuously extend in a first operable position and opening the tailgate facilitates deploying the ladder into a corresponding second operable
10 position.
2. A ladder according to Claim 1, wherein the location that the first leg portion is attached to the tailgate and the location that the second leg portion is attached to the truck both extend forward of the location where said first leg portion is coupled to said second leg portion.
- 15 3. A ladder according to Claim 2, wherein at least the first leg portion comprises two parallelly extending side rails with the at least one rung parallelly disposed therebetween.
4. A ladder according to Claim 1, wherein the second leg portion comprises a single support leg.
- 20 5. A ladder according to Claim 1, wherein the lower end of the second leg portion is detachable from the truck.
6. A ladder according to Claim 5, wherein the second leg portion is swingable rearwardly upon detachment from the truck.
7. A ladder according to Claim 1, wherein the first leg portion and the second
25 leg portion are lockably coupled to thereby prevent displacing the tailgate into an open position.
8. A ladder according to Claim 1, wherein between the first leg portion and the second leg portion there is a hinge fixable at a plurality of intermediate

positions to thereby facilitate arresting the second leg portion at a plurality of corresponding angular positions with respect to the first leg portion.

9. A ladder according to Claim 1, wherein the ladder is spontaneously deployed to a second operable position upon opening the tailgate and where at said
5 second operable position there is a rung accessible at a level lower than where the ladder is fastened to the lower portion of the truck.

10. A ladder according to Claim 1, wherein the lower portion of the truck to which the second leg portion is attachable is a bumper of the truck.

11. A ladder according to Claim 1, wherein the lower portion of the truck to
10 which the second leg portion is attachable is a lower rear portion of a chassis of the truck.

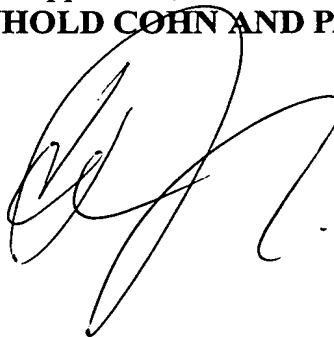
12. A ladder according to Claim 1, wherein the lower ends of the second leg portion are pivotally connectable to a support leg by means of removable pivot pins.

15 13. A ladder according to Claim 12, wherein the ladder may be deployed such that it is supported at its lower end by the ground surface.

14. A ladder according to Claim 12, wherein the second leg portion may be arrested at any angular position by means of a pivot hinge extending between the first leg portion and the second leg portion lockable at several angular positions.

20

For the Applicants,
REINHOLD COHN AND PARTNERS
By:

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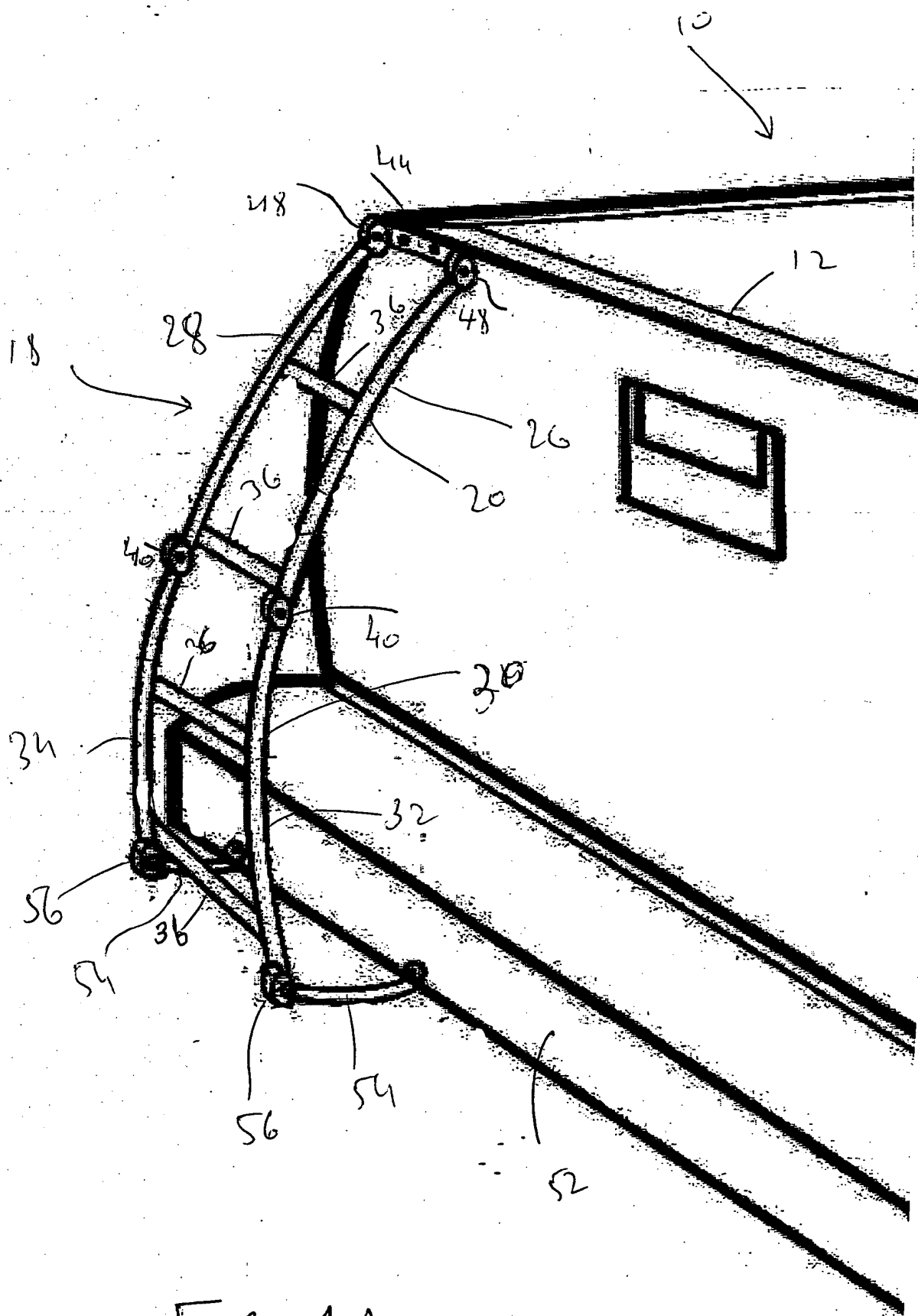


FIG. 1A

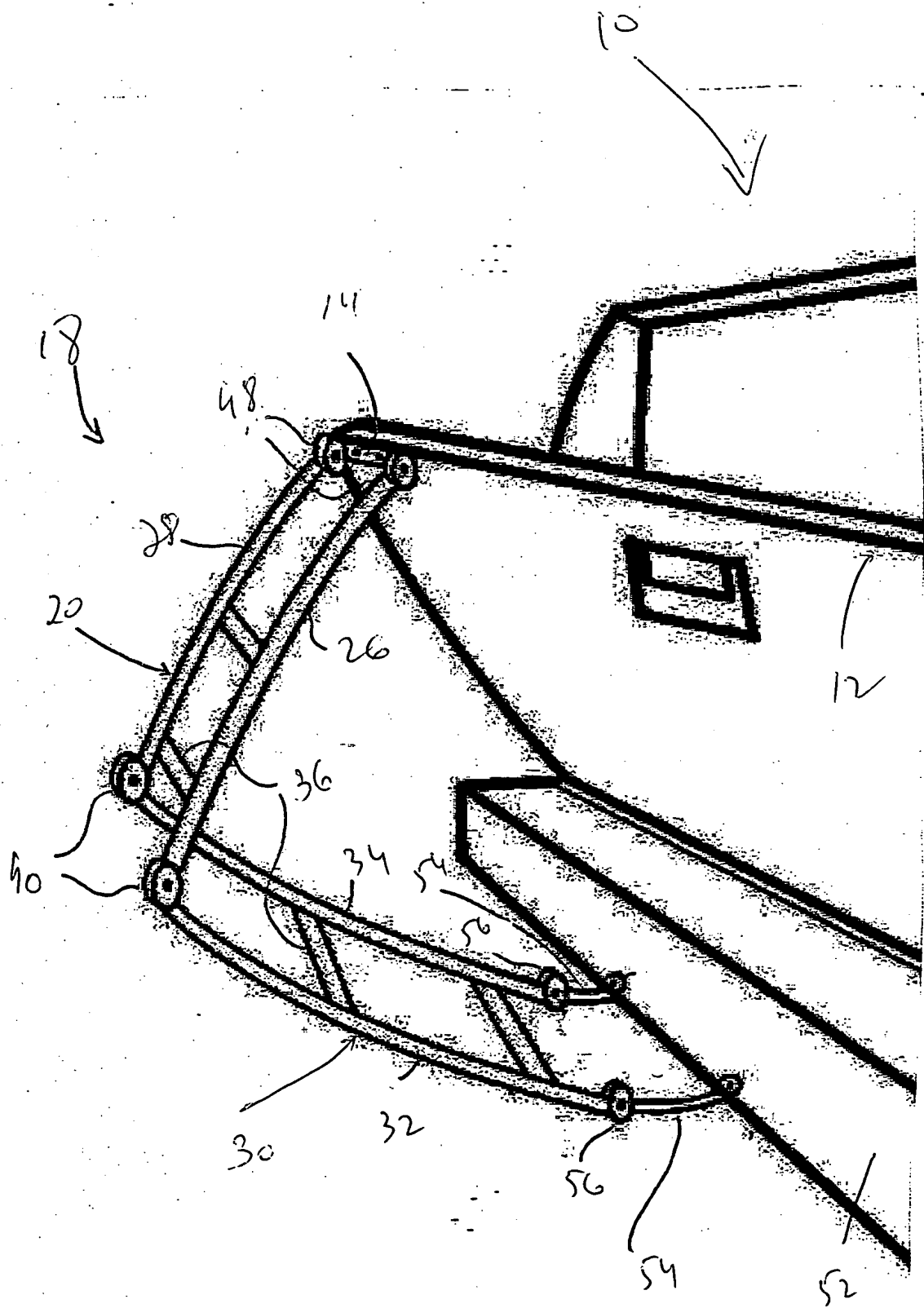


FIG. 1B

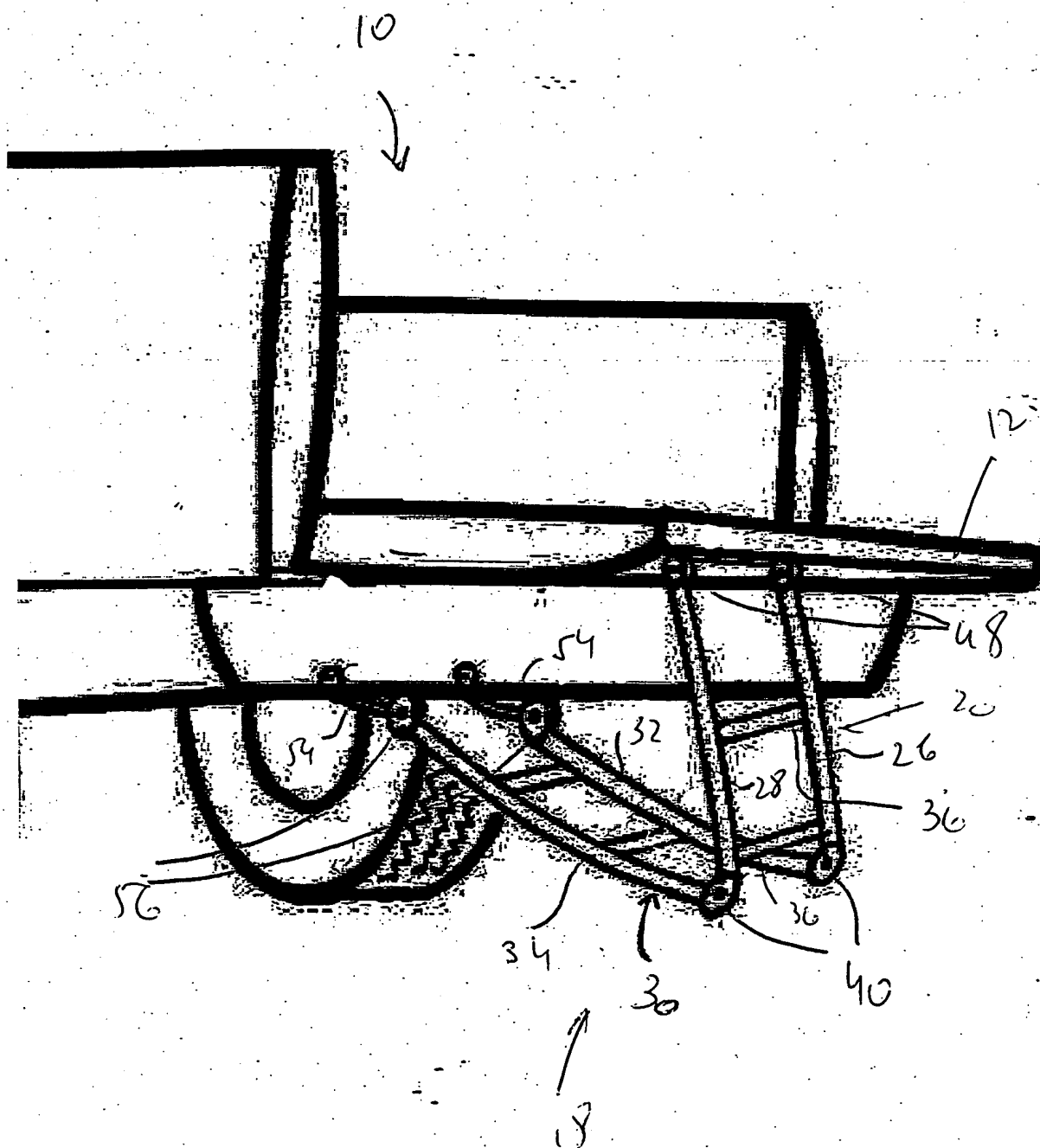
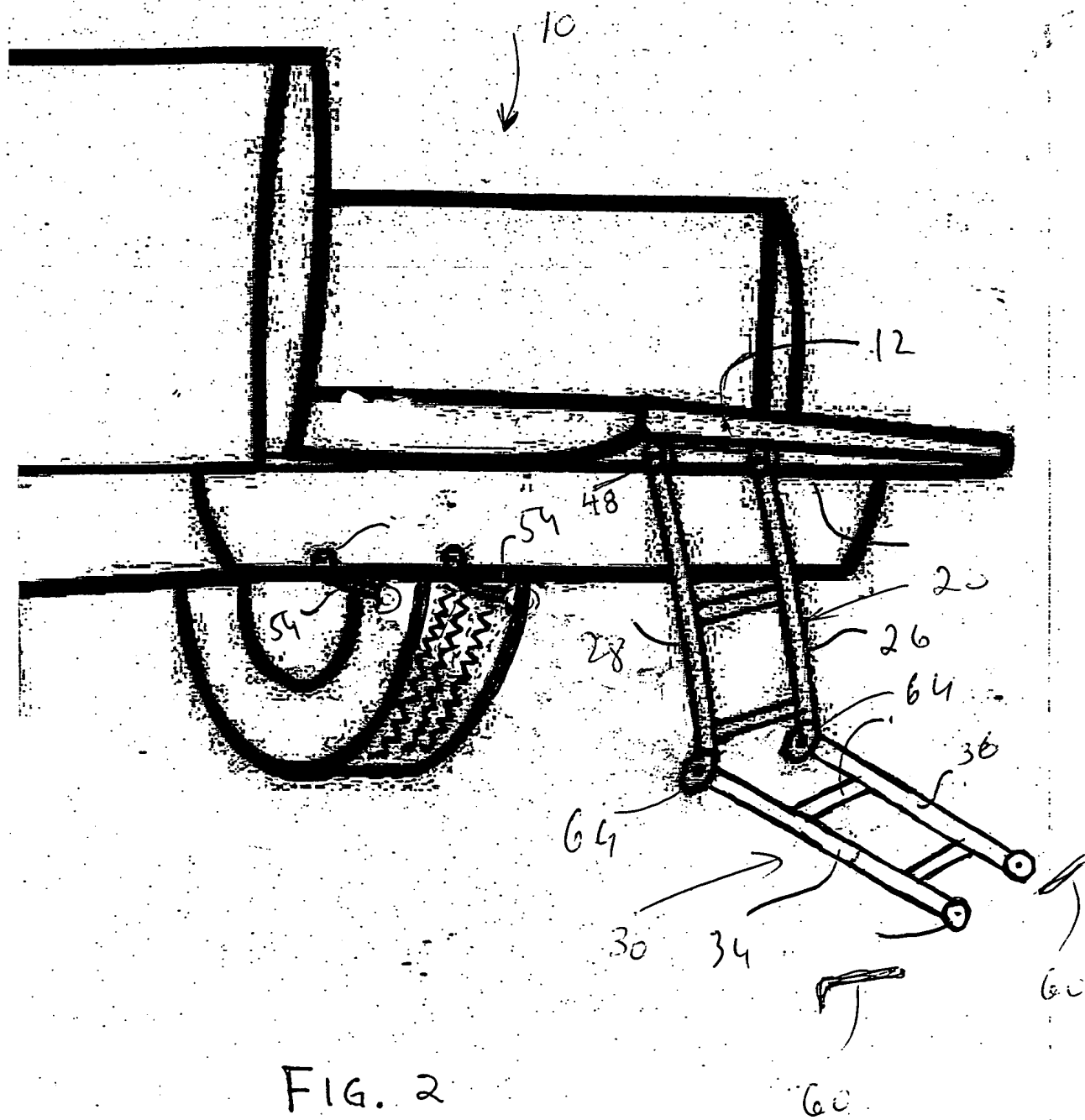


FIG. 1C



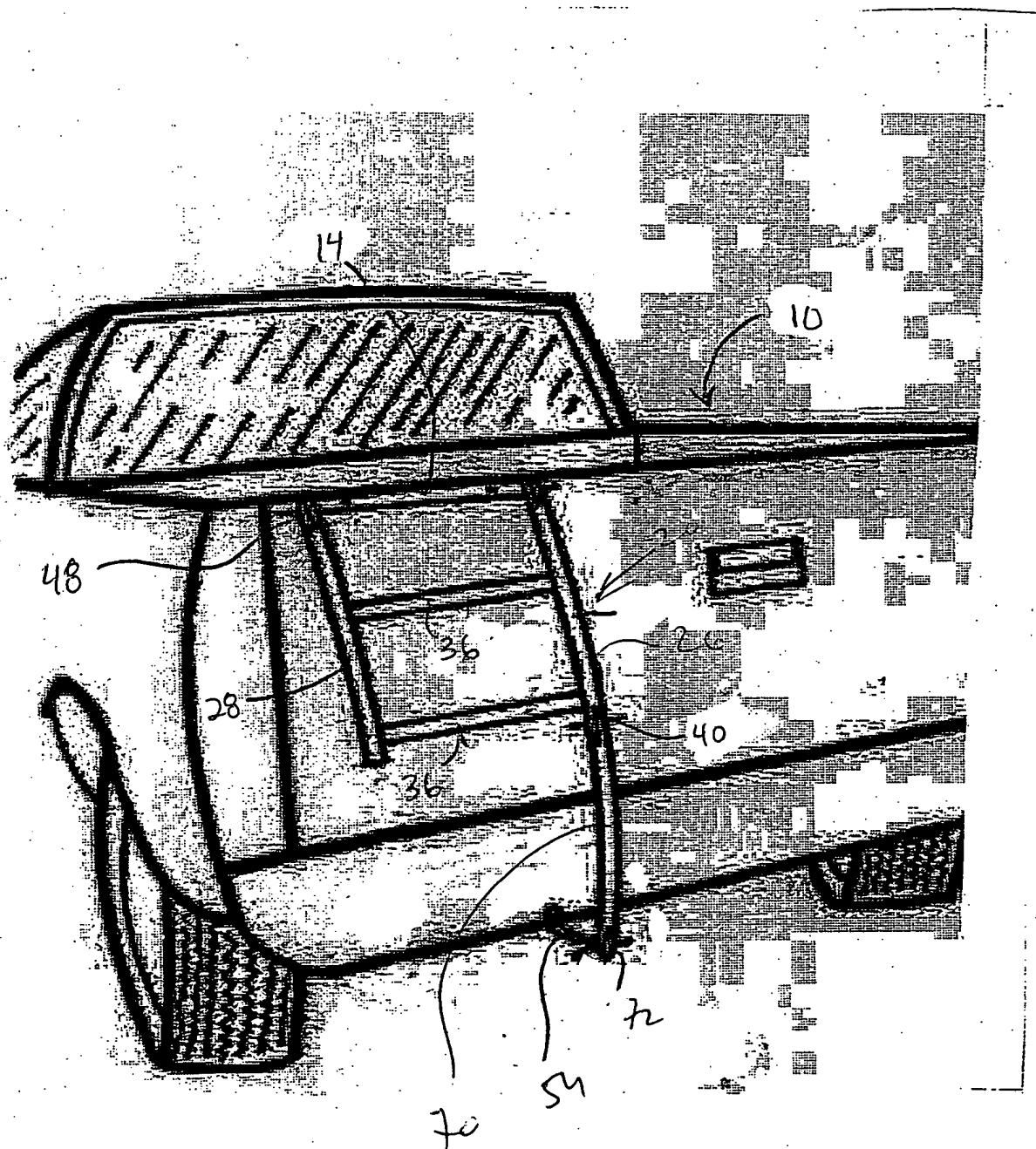


FIG. 3